



ANNEX F1

CALIBRATION CERTIFICATES FOR NOISE

# Certificate of Calibration

Certificate No. ATS25-066-CC007

**Customer:** **Envirotech Services Company**

Room 712, 7/F, My Loft,  
9 Hoi Wing Road, Tuen Mun  
N.T., Hong Kong

**Unit-under-test (UUT):**

**Description:** Precision Acoustic Calibrator  
**Manufacturer:** Larson Davis  
**Type No.:** CAL 200  
**Serial No.:** 11334

**Conditions during calibration:**

**Temperature:** 26°C  
**Relative Humidity:** 57%

**Test Specifications:** Calibration Check

**Date of calibration:** 20 September 2025

**Test Results:** All calibration points are within manufacturer's specification.

**Certified by:**

  
**Mr. Y. T. LEUNG / Technical Manager**  
MIOA, MHKIOA, MHKIQEP



**Issue Date: 20 September 2025**

1. The instrument under test was allowed to stabilize in the laboratory for over 24 hours.

2. Calibration equipment:

|                               |                |                      |
|-------------------------------|----------------|----------------------|
| <b>Description:</b>           | Sound Analyzer | Reference Microphone |
| <b>Manufacturer:</b>          | Brüel & Kjær   | Brüel & Kjær         |
| <b>Type No.:</b>              | 2270           | 4189                 |
| <b>Serial No.:</b>            | 3001883        | 2662797              |
| <b>Last Calibration Date:</b> | 11 March 2025  | 11 March 2025        |
| <b>Certificate No.:</b>       | AV250047       | AV250047             |

The calibration equipment used for calibration is traceable to National Standards via Standards and Calibration Laboratory, the Government of the HKSAR.

3. The values given in this certification only related to the values measured at the time of the calibration and any uncertainties quoted, if any, will not allow for the equipment long-term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the calibration. Acoustic Testing Services Limited shall not be liable for any loss or damage resulting from the use of the equipment.

4. Calibration Results

| Nominal value<br>dB | Measured value<br>dB | IEC 60942 Class 1<br>Tolerance Limits<br>dB | Conclusion | Expanded Measurement Uncertainty of<br>Reference Microphone B&K 4189 at 1000 Hz<br>dB |
|---------------------|----------------------|---------------------------------------------|------------|---------------------------------------------------------------------------------------|
| 94.00               | 94.07                | $\pm 0.25$                                  | PASS       | 0.20                                                                                  |
| 114.0               | 113.76               | $\pm 0.25$                                  | PASS       | 0.20                                                                                  |

All calibration points are within manufacturer's specification.

# Certificate of Calibration

for

**Description:** *Sound Level Meter*  
**Manufacturer:** *RION*  
**Type No.:** *NL-52 (Serial No.: 00175561)*  
**Microphone:** *UC-59 (Serial No.: 16651)*  
**Preamplifier:** *NH-25 (Serial No.: 65663)*

**Submitted by:**

**Customer:** *Envirotech Services Co.*  
**Address:** *Rm. 712, 7/F., My Loft, 9 Hoi Wing Road,  
Tuen Mun, Hong Kong*

Upon receipt for calibration, the instrument was found to be:

- ☒ Within (31.5Hz – 8kHz)  
☐ Outside

the allowable tolerance.

The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

**Date of receipt:** 07 January 2026

**Date of calibration:** 08 January 2026

**Date of NEXT calibration:** 07 January 2027

**Calibrated by:** *Ng*  
*Calibration Technician*

**Certified by:** *Ng Yan Wa*  
*Mr. Ng Yan Wa*  
*Laboratory Manager*

**Date of issue:** 08 January 2026

Certificate No.: APJ25-115-CC002



Page 1 of 4

**1. Calibration Precaution:**

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.

**2. Calibration Conditions:**

Air Temperature: 23.2 °C  
Air Pressure: 1006 hPa  
Relative Humidity: 47.2 %

**3. Calibration Equipment:**

|                          | Type     | Serial No. | Calibration Report Number | Traceable to |
|--------------------------|----------|------------|---------------------------|--------------|
| Multifunction Calibrator | B&K 4226 | 2288467    | AV240081                  | HOKLAS       |

**4. Calibration Results**

Sound Pressure Level

Reference Sound Pressure Level

| Setting of Unit-under-test (UUT) |                 |                |  | Applied value |               | UUT Reading, | IEC 61672 Class 1 |
|----------------------------------|-----------------|----------------|--|---------------|---------------|--------------|-------------------|
| Range, dB                        | Freq. Weighting | Time Weighting |  | Level, dB     | Frequency, Hz | dB           | Specification, dB |
| 30-130                           | dBA SPL         | Fast           |  | 94            | 1000          | 94.0         | ±0.4              |

Linearity

| Setting of Unit-under-test (UUT) |                 |                |  | Applied value |               | UUT Reading, | IEC 61672 Class 1 |
|----------------------------------|-----------------|----------------|--|---------------|---------------|--------------|-------------------|
| Range, dB                        | Freq. Weighting | Time Weighting |  | Level, dB     | Frequency, Hz | dB           | Specification, dB |
| 30-130                           | dBA SPL         | Fast           |  | 94            | 1000          | 94.0         | Ref               |
|                                  |                 |                |  | 104           |               | 104.3        | ±0.3              |

Time Weighting

| Setting of Unit-under-test (UUT) |                 |                |  | Applied value |               | UUT Reading, | IEC 61672 Class 1 |
|----------------------------------|-----------------|----------------|--|---------------|---------------|--------------|-------------------|
| Range, dB                        | Freq. Weighting | Time Weighting |  | Level, dB     | Frequency, Hz | dB           | Specification, dB |
| 30-130                           | dBA SPL         | Fast           |  | 94            | 1000          | 94.0         | Ref               |
|                                  |                 | Slow           |  |               |               | 94.0         | ±0.3              |

Certificate No.: APJ25-115-CC002



Page 2 of 4

## Frequency Response

## Linear Response

| Setting of Unit-under-test (UUT) |                 |                | Applied value |               | UUT Reading, | IEC 61672 Class 1 |
|----------------------------------|-----------------|----------------|---------------|---------------|--------------|-------------------|
| Range, dB                        | Freq. Weighting | Time Weighting | Level, dB     | Frequency, Hz | dB           | Specification, dB |
| 30-130                           | dB              | SPL            | 94            | 31.5          | 94.2         | $\pm 2.0$         |
|                                  |                 |                |               | 63            | 94.3         | $\pm 1.5$         |
|                                  |                 |                |               | 125           | 94.3         | $\pm 1.5$         |
|                                  |                 |                |               | 250           | 94.2         | $\pm 1.4$         |
|                                  |                 |                |               | 500           | 94.1         | $\pm 1.4$         |
|                                  |                 |                |               | 1000          | 94.0         | Ref               |
|                                  |                 |                |               | 2000          | 93.8         | $\pm 1.6$         |
|                                  |                 |                |               | 4000          | 93.3         | $\pm 1.6$         |
|                                  |                 |                |               | 8000          | 91.6         | +2.1; -3.1        |

## A-weighting

| Setting of Unit-under-test (UUT) |                 |                | Applied value |               | UUT Reading, | IEC 61672 Class 1     |
|----------------------------------|-----------------|----------------|---------------|---------------|--------------|-----------------------|
| Range, dB                        | Freq. Weighting | Time Weighting | Level, dB     | Frequency, Hz | dB           | Specification, dB     |
| 30-130                           | dBA             | SPL            | 94            | 31.5          | 54.8         | $-39.4 \pm 2.0$       |
|                                  |                 |                |               | 63            | 68.1         | $-26.2 \pm 1.5$       |
|                                  |                 |                |               | 125           | 78.1         | $-16.1 \pm 1.5$       |
|                                  |                 |                |               | 250           | 85.5         | $-8.6 \pm 1.4$        |
|                                  |                 |                |               | 500           | 90.9         | $-3.2 \pm 1.4$        |
|                                  |                 |                |               | 1000          | 94.0         | Ref                   |
|                                  |                 |                |               | 2000          | 95.1         | $+1.2 \pm 1.6$        |
|                                  |                 |                |               | 4000          | 94.3         | $+1.0 \pm 1.6$        |
|                                  |                 |                |               | 8000          | 90.5         | $-1.1 \pm 2.1$ ; -3.1 |

## C-weighting

| Setting of Unit-under-test (UUT) |                 |                | Applied value |               | UUT Reading, | IEC 61672 Class 1     |
|----------------------------------|-----------------|----------------|---------------|---------------|--------------|-----------------------|
| Range, dB                        | Freq. Weighting | Time Weighting | Level, dB     | Frequency, Hz | dB           | Specification, dB     |
| 30-130                           | dBC             | SPL            | 94            | 31.5          | 91.2         | $-3.0 \pm 2.0$        |
|                                  |                 |                |               | 63            | 93.5         | $-0.8 \pm 1.5$        |
|                                  |                 |                |               | 125           | 94.1         | $-0.2 \pm 1.5$        |
|                                  |                 |                |               | 250           | 94.2         | $-0.0 \pm 1.4$        |
|                                  |                 |                |               | 500           | 94.1         | $-0.0 \pm 1.4$        |
|                                  |                 |                |               | 1000          | 94.0         | Ref                   |
|                                  |                 |                |               | 2000          | 93.7         | $-0.2 \pm 1.6$        |
|                                  |                 |                |               | 4000          | 92.5         | $-0.8 \pm 1.6$        |
|                                  |                 |                |               | 8000          | 88.6         | $-3.0 \pm 2.1$ ; -3.1 |

## 5. Calibration Results Applied

The results apply to the particular unit-under-test only. All calibration points are within manufacture's specification as IEC 61672 Class 1.

Uncertainties of Applied Value:

|        |         |        |
|--------|---------|--------|
| 94 dB  | 31.5 Hz | ± 0.10 |
|        | 63 Hz   | ± 0.05 |
|        | 125 Hz  | ± 0.10 |
|        | 250 Hz  | ± 0.10 |
|        | 500 Hz  | ± 0.05 |
|        | 1000 Hz | ± 0.05 |
|        | 2000 Hz | ± 0.05 |
|        | 4000 Hz | ± 0.05 |
|        | 8000 Hz | ± 0.10 |
| 104 dB | 1000 Hz | ± 0.05 |
| 114 dB | 1000 Hz | ± 0.05 |

The uncertainties are evaluated for a 95% confidence level.

### Note:

The values given in this certification only related to the values measured at the time of the calibration and any uncertainties quoted will not allow for the equipment long-term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the calibration. (A+A)\*L shall not be liable for any loss or damage resulting from the use of the equipment.